



Putting WaterSense® to Work

# Hotel Installs Water-Efficient Sanitary Fixtures

*Sector: Hotels; Focus: Sanitary Fixtures and Equipment*

## Project Summary

As San Antonio continues to grow, water conservation has become an important part of the city's water management planning. Recognizing that conservation is more cost-effective than securing new water sources, in 2007, San Antonio Water System (SAWS) developed its WaterSaver Hotel program to work with select hotels to retrofit bathroom fixtures and fittings.

The Holiday Inn San Antonio International Airport (hereafter referred to as the Holiday Inn) is a 236,000 square foot hotel with 397 guest rooms. Since its construction in 1981, the hotel's bathrooms had not undergone major upgrades. When it heard of SAWS' WaterSaver Hotel program, it was one of the first to volunteer.

Through the program, SAWS paid for high-efficiency toilet, faucet, and showerhead upgrades in all 397 guest rooms, including the cost of the fixtures and installation. SAWS only required that specified toilets, showerheads, and faucet aerators were all properly installed. SAWS used the efficiency and performance criteria from the U.S. Environmental Protection Agency (EPA) WaterSense tank-type toilet and lavatory faucet specifications to select water-efficient, high-performing toilets and faucet aerators for installation. At the time, WaterSense had not issued its specification for showerheads, so the Holiday Inn selected its own showerheads; however, SAWS specified that they must have a flow rate less than 1.75 gallons per minute (gpm). Table 1 summarizes the fixtures replaced at the Holiday Inn.

Holiday Inn undertook additional water-saving measures, including reusing the condensate that builds up from heating and cooling equipment to irrigate the landscape and planting a rooftop herb garden. The hotel is also reusing backwash water from the swimming pool and blowdown water from the cooling tower.

## Case Study Highlights



- **Hotel:** Holiday Inn San Antonio International Airport
- **Location:** San Antonio, Texas
- **Potential occupancy:** 397 guest rooms
- **Building size:** 236,000 gross square feet
- **Water savings:** 7 million gallons of water per year
- **Energy savings:** 330,000 kilowatt-hours of electricity per year
- **Cost savings:** \$68,000 in water, sewer, and energy costs per year
- **Simple payback:** Less than 2 years

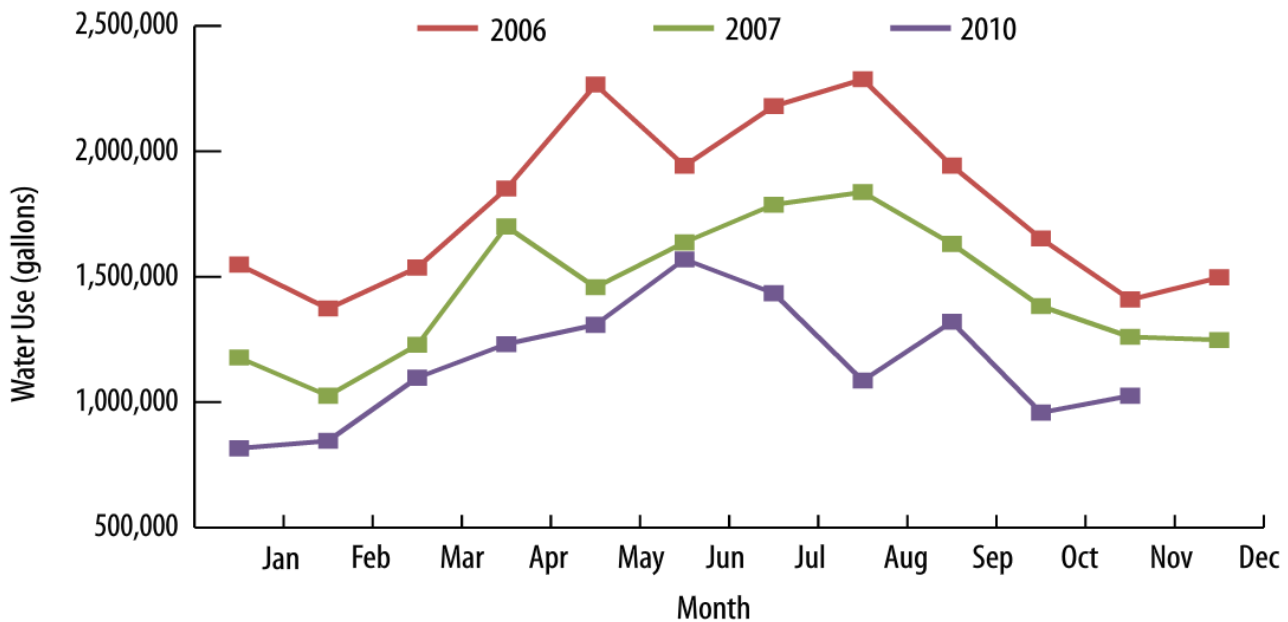
**Table 1. Holiday Inn's Fixtures and Fittings Retrofits**

Fixture/Fitting Replaced	Original Efficiency	Retrofit Efficiency	Number of Units Replaced
Toilets	3.5 gallons per flush (gpf)	1.1 gpf	297
Toilets	5.0 gpf	1.1 gpf	100
Faucet Aerators	2.2 gpm	1.5 gpm	397
Showerheads	2.5 gpm	1.75 gpm	397

## Savings Summary

Before the retrofit, the Holiday Inn used approximately 202 gallons of water per occupied room per day. After installing the high-efficiency toilets, faucet aerators, and showerheads in all of the guest rooms, water use dropped 35 percent to 132 gallons per occupied room per day. This resulted in savings of about 580,000 gallons a month, or 7 million gallons of water each year. Figure 1 illustrates the savings achieved after the retrofits were completed in late 2007.

Figure 1. Holiday Inn San Antonio International Airport Monthly Water Use



The Holiday Inn estimates that it saves approximately \$35,000 each year in water and sewer bills from reducing its water use. Because much of the water saved is hot water, the hotel also saves energy from these upgrades.

Although the Holiday Inn does not currently measure this energy savings, based upon typical hot water use from showerheads and faucets, the hotel likely saves an estimated 330,000 kilowatt hours of electricity and an additional \$33,000 per year in energy savings, for more than \$68,000 in total savings each year.

According to SAWS, the utility spent approximately \$100,000 retrofitting the 397 hotel guestroom bathrooms, which would have resulted in a payback period of less than two years, had the hotel paid for the upgrades. The hotel has also reported that it no longer receives calls for maintenance of the new fixtures or fittings, compared to the one to two calls received each day in the past.

## Acknowledgements

The U.S. Environmental Protection Agency's (EPA's) WaterSense program acknowledges Holiday Inn San Antonio International Airport owners and managers, SAWS Conservation Planner Brandon Leister, and SAWS Conservation Director Karen Guz for providing information for this case study.

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